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EXAMINER	
DANG, HUNG Q	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/650,633	GABRYJELSKI ET AL.	
	Examiner	Art Unit	
	Hung Q. Dang	2484	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 March 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,11-18,20,22,24,25,33-46,51,53-55,59-72 and 74* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,11-18,20,22,24,25,33-46,51,53-55,59-72 and 74* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 03/08/2011 have been fully considered and but they are not persuasive.

On page11, with respect to USC 101 rejections of claims 51, 72, and 74, Applicant argues that "[t]he office action has provided no proof or argument to show that a person having ordinary skill in the art would interpret a computer readable storage medium as including signals and propagating media where the specification makes no such claim. Instead, the examiner merely states that the term could cover non-statutory subject matter without providing any evidence."

In response, Examiner respectfully refers Applicant to at least Nakamura (US Patent 6,539,537) in column 13, lines 60-67 for proof showing that a person having ordinary skill in the art would interpret a computer readable storage medium as including signals and propagating media.

As such, 101 rejections of claims 51, 72, and 74 stand as previously presented.

On pages 12-14, Applicant argues that Kaneshige does not disclose the feature of "wherein at least one buffer of the plurality of buffers corresponding to the first real-time data stream has a minimum buffer capacity that is a function of read speed and at least two seek times, the at least two seek times comprising a time to seek to a location logically forward on the disc, and a time to seek to a location logically backward on the disc."

In response, Examiner respectfully disagrees. At least in column 15, lines 1-18, Kaneshige discloses a formula that specifies a buffer with a minimum buffer capacity B_m, which is a function of (1) read speed, which is given by T_e (defined as read-in time), and (2) Tj, which is jump time, which corresponds to a seek time.

With respect to the seek time Tj, in column 5, lines 48-57, Kaneshige teaches that a jump can be in the forward and backward directions within a maximum allowable jump range. As such, the seek time Tj given by the equation for B_m as described above must be considered for both forward and backward jumps thus comprises two corresponding seek times: one is forward and one is backward because both of forward and backward jumps result in corresponding forward seek time and backward seek time respectively.

On pages 16-17, Applicant argues that Ohta does not teach the features of "reading at least a first amount of data from a first position on the optical media such that an internal media cache is not concurrently caching the first amount of data when the reading of the first amount of data starts; and reading at least a second amount of data from a second position on the optical media, wherein the second position is separated from the first position by data representing an increment of playback time that is sufficient for determining characteristic read performances across the optical media; and reading data from other positions on the optical media to determine read performances across substantially all of the optical media."

In response, Examiner respectfully disagrees. At least as shown in Fig. 6, Ohta teaches that data is read into and out of the reproduction buffer. The first amount is

interpreted to correspond to the amount of data that is read into the buffer when the buffer is initially at the level of 3n and reaches to 4n as shown in Phase 1 of Fig. 6. Since the claim recites an internal media cache that could be any buffer.

(i) Examiner interprets a recording buffer as such an internal media cache. When data are read from the optical disc for reproduction, it is not buffered into the recording buffer. As such the limitation of "reading at least a first amount of data from a first position on the optical media such that an internal media cache is not concurrently caching the first amount of data when the reading of the first amount of data starts" is met.

(ii) Alternatively, Examiner also interprets the reproduction buffer as the recited internal media cache. Exactly at the time when the reading of data just starts, of course, the just read data have not been buffered yet because it takes some extra time after that time for the read data being placed into the reproduction buffer. With this interpretation, Ohta also disclose the limitation of "reading at least a first amount of data from a first position on the optical media such that an internal media cache is not concurrently caching the first amount of data when the reading of the first amount of data starts."

With respect to the limitation of "reading at least a second amount of data from a second position on the optical media, wherein the second position is separated from the first position by data representing an increment of playback time that is sufficient for determining characteristic read performances across the optical media", Fig. 6 and the its description as cited in column 7, lines 30-63 teaches "a second amount", which

corresponds to the data read from the optical disk to the reproduction buffer during phase 3. This amount is at a second position, which is separated from the first position by a time period that is equivalent to data representing an increment of playback time (equivalent to the time period multiplied by the reading speed of the head). This time period is sufficient for determining characteristic read performances across the optical media by means of the associated latency or head move (see Fig. 6). As such, the limitation of "reading at least a second amount of data from a second position on the optical media, wherein the second position is separated from the first position by data representing an increment of playback time that is sufficient for determining characteristic read performances across the optical media" is met.

With respect to the limitation of "reading data from other positions on the optical media to determine read performances across substantially all of the optical media", this limitation is met for the same reason as discussed above in view of the series of "reproduction phases" as shown in Fig. 6. The read performances are determined via the latency, based on which the capacity of the buffer is determined as described at least in column 7, lines 50-56.

As such, Applicant's arguments with respect to claim 25 are not persuasive.

On pages 17-18, Applicant argues there is no mention of non-real-time data streams in Ohta.

In response, Examiner respectfully disagrees. In the cited sections, there are a plurality of data streams are read. At least one for outputting for playback (via video

signal outputs and audio signal outputs as shown in Fig. 14.B) and at least one is compression mode converted for outputting to other device such as a computer.

Examiner interprets those signals are processed and outputted for playback as real-time data streams and those having compression mode converted and outputted to other devices for further processing as non-real time data streams.

As such, Applicant's arguments are not persuasive.

Examiner's Note

Discenzo reference cited below claims priority benefits of US application 10/214927 as its continuation-in-part application. US application 10/214927 does support the cited features of using data fusion engines and neural networks to perform utility-based analysis at least in paragraph [0128].

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

> Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in Sec. 101.
>
> ... a signal does not fall within one of the four statutory classes of Sec. 101.
>
> .... signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of Sec. 101.

Claims 51, 72, and 74 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows.

Claims 51, 72, and 74 recite "a computer-readable storage medium having stored thereon ... computer-executable components". However, the recited "computer-readable medium" could be reasonably interpreted as encompassing statutory media such as a "ROM", "RAM", "EPROM", "CD-ROM", etc, as well as non-statutory subject matter such as a magnetic, optical, electromagnetic, infrared, ... or propagation medium.

A "magnetic, optical, electromagnetic, infrared, ... or propagation medium" is neither a process nor a product, (i.e., a tangible "thing") and therefore does not fall within one of the four statutory classes of § 101. Rather, a "magnetic, optical, electromagnetic, infrared, ... or propagation medium" is a form of energy, in the absence of any physical structure or tangible material.

The Examiner suggests amending the claims to recite the "computer-readable storage medium" as either (1) "computer-readable non-transitory storage medium", (2) "memory storage device", or (3) "computer-readable storage medium that doesn't consist of a signal" to include tangible computer readable media, while at the same time excluding the intangible media such as signals, carrier waves, etc. Any amendment to the claim should be commensurate with its corresponding disclosure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 11-14, 17, 20, 22, 24, 53-55, 65-67, 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta et al. (US Patent 6,330,214 – hereinafter Ohta) and Kaneshige et al. (US Patent 6,360,055 – hereinafter Kaneshige).

Regarding claim 1, Ohta discloses a system that facilitates utilizing an optical medium *(Fig. 14A – wherein the reproduction system utilizing optical disc in the optical disc drive 100)*, the system comprising at least one processor *(at least system controller 104 shown in Fig. 14A)*, the system configured to: provide concurrent reading of a plurality of data streams from the optical medium to a corresponding one of a plurality of buffers *(Fig. 14A; column 16, lines 25-33 – wherein the system simultaneously reproduces separate files recorded in the optical disc in the optical disc drive - the data in each file comprises video and audio streams, each of which is interpreted as one data stream in the plurality of data streams as recited - the data of each stream is supplied to a corresponding one of a plurality of buffers as described in column 16, lines 25-32 and further shown in Fig. 14A)*, the plurality of data streams comprising at least one real-time data stream *(column 16, lines 25-33 – wherein one of the data streams is interpreted as the recited real-time data stream since each frame of the video and audio streams should be played back in a timely manner)*; analyze at least one of the plurality of data streams *(column 16, lines 33-39 – wherein the analysis is performed at least in*

order to provide timing adjustment between picture and sound); infer potential starvation of a first real-time data stream of the at least one real-time data stream *(column 7, lines 57-63 – wherein potential starvation is inferred when the residual data is reduced to a certain level – also although this description is given for simultaneous recording/reproduction, examiner interprets this teachings also applicable to the case of simultaneous reproduction described in column 16, lines 26-33)*; and based on the interference of potential starvation, take remedial action to mitigate the inferred starvation of the first real-time data stream *(column 8, lines 4-6 – wherein reproduction is done so as to make up signal too much reduced due to a starvation caused by latency plus error as further shown in Fig. 6 and described in column 7, lines 57-63 – also although this description is given for simultaneous recording/reproduction, examiner interprets this teachings also applicable to the case of simultaneous reproduction described in column 16, lines 26-33).*

However, Ohta does not disclose wherein the at least one buffer of the plurality of buffers corresponding to the first real-time data stream has a minimum buffer capacity that is a function of read speed and at least two seek times, the at least two seek times comprising a time to seek to a location logically forward on the disc, and a time to seek to a location logically backward on the disc.

Kaneshige discloses wherein the buffer corresponding to a real-time data stream has a minimum buffer capacity that is a function of read speed and at least two seek times *(column 3, lines 40-44; Fig. 24; Fig. 25)*, the at least two seek times comprising a time to seek to a location logically forward on the disc, and a time to seek to a location

logically backward on the disc *(column 5, lines 52-62; column 15, lines 1-18 – wherein the seek time T_j comprises seek times in both forward and backward directions as described at least in column 5, lines 52-62 – also see "Response to Arguments" above).*

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of Kaneshige into the system taught by Ohta in order to suppress breaks or disturbance in reproduced video *(Kaneshige, column 2, lines 8-13).*

Regarding claim 11, Ohta also discloses a buffer controller that controls creation and/or use of at least one buffer *(column 16, lines 33-37; "Memory Controller 164" of Fig. 14A – wherein at least the memory controller is used to control at least the use of the buffers in the buffer memory).*

Regarding claim 12, Ohta also discloses the buffer controller performs a utility-based analysis in connection with buffer access *(column 6, line 15 – column 8, line 31; column 16, lines 20-43).*

Regarding claim 13, Ohta also discloses the utility-based analysis is based at least in part on a probabilistic-based determination of cost associated with saving data to the at least one buffer *(column 6, line 15 – column 8, line 48).*

Regarding claim 14, Ohta also discloses, the utility-based analysis is based at least in part on a probabilistic-based determination of cost associated with retrieving data from the at least one buffer *(column 6, line 15 – column 8, line 48).*

Regarding claim 17, Ohta also discloses the plurality of data streams comprises a plurality of real-time data streams *(column 16, lines 25-33 – wherein each of the video*

and audio streams is interpreted as the recited real-time data stream since each frame of the video and audio streams should be played back in a timely manner), the system further configured to provide concurrent playback of a plurality of data streams from the optical medium *(Fig. 14A; column 16, lines 26-33 – wherein simultaneous reproduction of a plurality of video and audio streams is provided)*.

Regarding claim 20, see the teachings of Ohta as discussed in claim 1 above. Further, Ohta also discloses a continuity component, the continuity component configured to facilitate concurrent recordation of a plurality of data streams in parallel from the optical medium *(column 7, lines 36-38; column 16, lines 33-37 – wherein concurrent recordation of a plurality of the data stream is performed in parallel from the optical disc to corresponding buffers)*.

Regarding claim 22, Ohta also discloses the remedial action comprises dynamically ordering reading of the data streams *(column 12, lines 43-47; column 16, lines 25-43 – wherein examiner interprets the reading of the data streams must be dynamically ordered in a certain manner at least to provide balance between read and write with respect to the reproduction buffer memory)*.

Regarding claim 24, Ohta also discloses the inferring potential starvation comprises using a probabilistic-based utility analysis *(column 6, line 15 – column 8, line 48; column 16, lines 25-43)*.

Regarding claim 53, Ohta also discloses the system is further configured to perform a utility-based analysis in connection with the concurrent reading *(column 6, line 15 – column 8, line 31 - although this description is given for simultaneous*

recording/reproduction, examiner interprets this teachings also applicable to the case of simultaneous reproduction described in column 16, lines 26-33, which is corresponding to the recited concurrent reading).

Regarding claim 54, Ohta also discloses the utility-based analysis uses a classifier *(column 6, line 15 – column 8, line 31; column 16, lines 20-43 – wherein at least it classifies between recordation vs. reproduction or between recording buffer vs. reproducing buffer etc. – also within a reproduction, it is classified based on phases as shown at least in Figs. 9-10).*

Regarding claim 55, Ohta also discloses the system is further configured to perform the utility-based analysis by inferring when to initiate recordation *(Figs. 7-8).*

Regarding claim 65, see the teachings of Ohta as discussed in claim 1 above. However, Ohta also discloses the system further comprising an optical media drive operatively coupled to read the optical medium *(Fig. 14A – optical disc drive 100).*

However, Ohta does not disclose the system further configured to: determine a first plurality of seek times, each of the first plurality of seek times based on a seek from an earlier location on optical media to a later location on optical media; determine a second plurality of seek times, each of the second plurality of seek times based on a seek from an later location on optical media to an earlier location on optical media, the first and second plurality of seek times collectively referred to as the combined seek times, wherein the inference is based on at least a first seek time of the first plurality of seek times and at least a second seek time of the second plurality of seek times.

Kaneshige discloses a system configured to: determine a first plurality of seek times, each of the first plurality of seek times based on a seek from an earlier location on optical media to a later location on optical media *(column 3, lines 40-44; Fig. 24; Fig. 25; column 5, lines 52-62; column 15, lines 1-18 – wherein the seek time T_j comprises seek times in both forward and backward directions as described at least in column 5, lines 52-62 – the seek times in forward directions are interpreted as the recited the seek times based on a seek from an earlier location to a later location)*; determine a second plurality of seek times, each of the second plurality of seek times based on a seek from an later location on optical media to an earlier location on optical media *(column 3, lines 40-44; Fig. 24; Fig. 25; column 5, lines 52-62; column 15, lines 1-18 – wherein the seek time T_j comprises seek times in both forward and backward directions as described at least in column 5, lines 52-62 – the seek times in backward directions are interpreted as the recited the seek times based on a seek from an earlier location to a later location)*, the first and second plurality of seek times collectively referred to as the combined seek times, wherein the inference is based on at least a first seek time of the first plurality of seek times and at least a second seek time of the second plurality of seek times *(column 3, lines 40-44; Fig. 24; Fig. 25; column 5, lines 52-62; column 15, lines 1-18 – wherein the seek time T_j comprises seek times in both forward and backward directions as described at least in column 5, lines 52-62)*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of Kaneshige into the system taught by

Ohta in order to suppress breaks or disturbance in reproduced video *(Kaneshige, column 2, lines 8-13).*

Regarding claim 66, Kaneshige also discloses the determining at least a first of the combined seek times comprises: causing the drive to seek from a first location on the optical media to a second position on the optical media *(Figs. 23-24 – wherein causing the drive to jump and T_j is defined by the jumping time).*

Regarding claim 67, Kaneshige also discloses the causing the drive to seek from a first location on the optical media to a second location on the optical media comprises: reading at least a first amount of data from the first location on the optical media such that an internal media cache of the optical hardware device is not caching data from the second location on the optical media *(Fig. 23; column 13, line 66 – column 14, line 4 – wherein at the start of the jump data from the second position are not read in until t_6)*; reading at least a second amount of data from the second location on the optical media *(Fig. 23; column 13, line 66 – column 14, line 4 – wherein data from the second position are read in at t_6).*

Regarding claim 69, Ohta and Kaneshige also disclose causing the drive to seek from a first location on the optical media to a second location on the optical media *(Kaneshige: Figs. 23-24)* comprises sending a SEEK command *(Ohta: Fig. 6; column 7, lines 45-55).*

Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta and Kaneshige as applied to claims 1, 11-14, 17, 20, 22, 24, 53-55, 65-67,

69 above, and further in view of Osakabe (US Patent 6,894,961 – hereinafter Osakabe).

Regarding claim 15, see the teachings of Ohta and Kaneshige as discussed in claim 1 above. However, Ohta and Kaneshige do not disclose the optical medium has a guaranteed minimum data transfer rate.

Osakabe also discloses the optical medium has a guaranteed minimum data transfer rate *(column 1, line 39 – column 2, line 30).*

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of Osakabe into the system disclosed by Ohta and Kaneshige in order to permit recording with minimized errors *(Osakabe: column 1, lines 44-49).*

Regarding claim 16, Osakabe also discloses the guaranteed minimum data transfer rate is at least about 176 KBps *(column 1, line 39 – column 2, line 30; Table 4; column 8, lines 35-61 - wherein speed of 1X corresponds to 150 KBps - see paragraph [0003] of Green for support).*

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta and Kaneshige as applied to claims 1, 11-14, 17, 20, 22, 24, 53-55, 65-67, 69 above, and further in view of Lamkin et al. (US 2002/0078144 – hereinafter Lamkin).

Regarding claim 18, see the teachings of Ohta and Kaneshige as discussed in claim 17 above. However, Ohta and Kaneshige do not explicitly at least two of the plurality of real-time data streams corresponding to a CD audio track.

Lamkin discloses at least two of a plurality of real-time data streams corresponding to a CD audio track *(pages 15-16, table A.1.5)*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of Lamkin into the system taught by Ohta and Kaneshige in order to play back CD audio data thus enhancing the applicability of the system.

Claims 25, 33-40, 43-46, 51, 72, and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta and Takagi (US Patent 5,999,691 – hereinafter Takagi).

Regarding claim 25, Ohta discloses a method of utilizing optical media, the method comprising: starting to read a first data stream from the optical media at time t_x, the first data stream being a real-time data stream *(column 16, lines 26-33 – wherein each of the video and audio streams is interpreted as the recited real-time data stream since each frame of the video and audio streams should be played back in a timely manner)*; and starting to read a second data stream from the optical media concurrently with the first data stream at time t_y while the first data stream is being read *(column 16, lines 26-33 – wherein the second data stream is the data stream recorded in the second file separate from the first file)*; transferring the first data stream to a first buffer for temporary storage at a sufficient rate to allow transfer of the second data stream without causing starvation of the first data stream *(column 16, lines 33-43 – wherein the transferring is performed to prevent overflow and underflow of the corresponding buffers)*; determining read performance across the optical media to facilitate

ascertaining an optical hardware device's ability to read the optical media, the optical hardware device employed to run the optical media, the determining read performance across the optical media comprising: reading at least a first amount of data from a first position on the optical media such that an internal media cache is not concurrently caching the first amount of data when the reading of the first amount of data starts *(column 7, lines 30-63; Fig. 6 – first amount is interpreted to correspond to the amount of data that is read into the buffer when the buffer is initially at the level of 3n – also see" Response to Arguments" above)*; and reading at least a second amount of data from a second position on the optical media, wherein the second position is separated from the first position by data representing an increment of playback time that is sufficient for determining characteristic read performances across the optical media *(column 7, lines 30-63; Fig. 6 – also see "Response to Arguments" above)*; and reading data from other positions on the optical media to determine read performances across substantially all of the optical media *(column 7, lines 30-63; Fig. 6 – also see "Response to Arguments" above).*

Ohta does not explicitly disclose t_x is not equal to t_y.

Takagi discloses a user can select different starting times for playing back each of the plurality of data streams according to their convenience *(column 15, line 47 – column 16, line 52; Fig. 10 - wherein user can choose to select playback of a plurality of data streams arbitrarily).*

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the feature that lets user arbitrarily select different

starting times for playing each stream into the method taught by Ohta in order to provide users with convenience in selecting which stream to be played back thus enhancing the user interface of the method.

Regarding claim 33, Ohta also discloses the first amount of data being about 8 MB *(Fig. 6; wherein the amount of 3n of data is interpreted as about 8 MB)*.

Regarding claim 34, Ohta also discloses the increment of time being about 5 minutes *(Fig. 6 - wherein at least the skipped time corresponds to the time period between starting reading the first amount of data and start of phase 1 and is interpreted as about 5 minutes*).

Regarding 35, Ohta also discloses the second amount of data is substantially equal in size to the first amount of data *(Fig. 6 – wherein each amount of data in "reproduction" periods is interpreted as substantially equal in size)*.

Regarding claim 36, Ohta also discloses the first amount of data is determined based at least in part upon an internal buffer size of the optical hardware device *(Fig. 6 – wherein the amount of data read in each "reproduction period" at least is determined to be less than the available capacity of the buffer)*.

Regarding claim 37, Ohta also discloses determining seek times across the optical media to facilitate ascertaining the optical hardware device's ability to seek on the optical media, the optical hardware device employed to run the optical media, the determining seek times comprising: dividing the optical media into a number of sections, the number of sections comprising at least a first section and at least a second section, such that an internal cache of the optical hardware device does not pre-cache data from

the second section when told to start reading from the first section *(Fig. 6; column 6, lines 59-65; column 7, lines 42-63)*; and for all ordered pairs of sections comprising any two sections, ensuring that the optical hardware device is reading from the first section and then causing the optical hardware device to seek to the second section to gain characteristic seek performances across the optical media *(Fig. 6; column 6, lines 59-65; column 7, lines 42-63)*.

Regarding claim 38, Ohta also discloses all sections are of substantially equal size *(Fig. 6 – wherein the amounts of data read on both sides of the "head move" period are interpreted as having substantially equal size)*.

Regarding claim 39, Ohta also discloses a size of the sections is determined based at least in part upon the an internal buffer size of the optical hardware device *(Fig. 6 – wherein the amounts of data read on both sides of the "head move" period" is determined at least to be less than the available capacity of the buffer)*.

Regarding claim 40, Ohta also discloses ensuring that the optical hardware device is reading from the first section comprises reading an amount of data larger than an internal buffer size of the optical hardware device from a section other than the first and second sections *(Fig. 6 – wherein an internal buffer size is interpreted to 2n, the amount of the data read to fill up to the level of 3n is interpreted as the data from some section other the first and second sections, the first section corresponds to the section contain the data read in phase 1 while the second section is interpreted as corresponding to that containing the data read in phase 3)*.

Regarding claim 43, Ohta also discloses causing the optical hardware device to seek to the second section comprises using a SEEK command *(Fig. 6; column 7, lines 45-55).*

Regarding claim 44, Ohta also discloses a size of the sections is about 5 minutes *(Fig. 6 - wherein at least the size of data in either "section" is interpreted as about 5 minutes*).

Regarding claim 45, Ohta also discloses ensuring that the optical hardware device is reading from the second section comprises reading an amount of data larger than an internal buffer size of the optical hardware device from the first section *(Fig. 6 – wherein the internal buffer size is interpreted to 2n, the amount of the data read to fill up to the level of 4n is interpreted as the data from first section while the second section is interpreted as corresponding to the section that contains the data read in phase 3).*

Regarding claim 46, Ohta also discloses determining whether minimum buffer requirements are satisfied, the minimum buffer requirements being a function of read speed and seek times *(column 6, lines 15-40, 60-65; column 7, lines 35-63).*

Regarding claim 51, Ohta also discloses at least one computer-readable storage medium having stored thereon the following computer executable components: a component that provides for concurrently reading a non-real-time data stream from optical media starting at time t_y *(column 16, lines 25-33; column 18, lines 1-8 - wherein the data streams that are sent to a computer as described in column 18, lines 1-8 are interpreted as non-real-time data streams – also see "Response to Arguments" above)* a and reading a real-time data stream from the optical media starting time t_x *(column 16,*

lines 25-33 – wherein one of the data streams read out for playback is interpreted as the recited real-time data stream – also see "Response to Arguments" above).

However, Ohta does not disclose wherein $t_x \neq t_y$.

Takagi discloses a user can select different starting times for reading each of the plurality of data streams according to their convenience *(column 15, line 47 – column 16, line 52; Fig. 10 - wherein user can choose to select reading of a plurality of data streams arbitrarily).*

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the feature that lets user arbitrarily select different starting times for reading each stream into the method taught by Ohta in order to provide users with convenience in selecting which stream to be read thus enhancing the user interface of the method.

Claim 72 is rejected for the same reason as discussed in claim 25 above.

Claim 74 is rejected for the same reason as discussed in claim 37 above.

Claims 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta and Takagi as applied to claims 25, 33-40, 43-46, 51, 72, and 74 above, and further in view of King et al. (US 2002/0169996 – hereinafter King).

Regarding claim 41, see the teachings of Ohta and Takagi as discussed in claim 37 above. However, Ohta and Takagi do not disclose ensuring that the optical hardware device is reading from the first section comprises sending a READ I0 command with a force unit access (FUA) bit set to one.

King discloses sending a READ I0 command with a force unit access (FUA) bit set to one *([0013])*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of King into the method disclosed by Ohta in order to provide reliability of data *(King: [0013])*.

Regarding claim 42, see the teachings of Ohta and Takagi as discussed in claim 37 above. However, Ohta and Takagi do not disclose ensuring that the optical hardware device is reading from the second section comprises sending a READ I0 command with a force unit access (FUA) bit set to one.

King discloses sending a READ I0 command with a force unit access (FUA) bit set to one *([0013])*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of King into the method disclosed by Ohta in order to provide reliability of data *(King: [0013])*.

Claims 59 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta and Kaneshige as applied to claims 1, 11-14, 17, 20, 22, 24, 53-55, 65-67, 69 above, and further in view of Discenzo et al. (US 2004/0267395 – hereinafter Discenzo).

Regarding claim 59, see the teachings of Ohta and Kaneshige as discussed in claim 53 above.

However, Ohta and Kaneshige do not disclose the system is configured to perform the utility-based analysis using at least one data fusion engine.

Discenzo discloses a system configured to perform the utility-based analysis using at least one data fusion engine *([0058] – wherein inference of system's conditions and states is performed using Bayesian networks, fuzzy logic, data fusion engines, hidden Markov Models, decision trees, model-based methods etc.).*

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the use of at least one data fusion engine for utility-based analysis as taught by Discenzo into the system disclosed by Ohta and Kaneshige to improve efficiency and reliability of the system *(Discenzo, [0012]).*

Regarding claim 64, Discenzo also discloses the system is further configured to perform the utility-based analysis using at least one neural network (*[0058]*).

Claims 60-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta and Kaneshige as applied to claims 1, 11-14, 17, 20, 22, 24, 53-55, 65-67, 69 above, and further in view of Vasko et al. (US Patent 7,058,712 – hereinafter Vasko).

Regarding claim 60, see the teachings of Ohta and Kaneshige as discussed in claim 53 above. However, Ohta and Kaneshige do not disclose the system is further configured to perform the utility-based analysis using at least one support vector machine (SVM).

Vasko discloses the system is further configured to perform the utility-based analysis using at least one support vector machine (SVM) *(column 11, lines 32-42 – wherein inference of utility of system resources is performed using Support Vector Machines or Naïve Bayes).*

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the use of at least one data fusion engine for utility-based analysis as taught by Vasko into the system disclosed by Ohta and Kaneshige to improve efficiency of the system *(Vasko, column 11, lines 44-46).*

Regarding claim 61, Vasko also discloses wherein the system is further configured to perform the utility-based analysis using at least one naive Bayes model *(column 11, lines 32-42 – wherein inference of utility of system resources is performed using Support Vector Machines or Naïve Bayes).*

Claims 62-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta and Kaneshige as applied to claims 1, 11-14, 17, 20, 22, 24, 53-55, 65-67, 69 above, and further in view of Horvitz (US Patent 6,009,452 – hereinafter Horvitz).

Regarding claim 62, see the teachings of Ohta and Kaneshige as discussed in claim 53 above. However, Ohta and Kaneshige do not disclose the system is further configured to perform the utility-based analysis using at least one Bayesian network.

Horvitz discloses the system is further configured to perform the utility-based analysis using at least one Bayesian network *(column 22, lines 5-27; column 30, lines 27-30 – wherein inference of probability of state transitions of system is performed using Bayesian Networks or Hidden-Markov models).*

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the use of at least one data fusion engine for utility-based

analysis as taught by Horvitz into the system disclosed by Ohta and Kaneshige to improve efficiency of the system *(Horvitz, column 22, lines 23-27)*.

Regarding claim 63, Horvitz also discloses wherein the system is further configured to perform the utility-based analysis using at least one Hidden Markov Model (HMM) *(column 22, lines 5-27; column 30, lines 27-30 – wherein inference of probability of state transitions is performed using Bayesian networks or Hidden-Markov models)*.

Claim 68 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta and Kaneshige as applied to claims 1, 11-14, 17, 20, 22, 24, 53-55, 65-67, and 69 above, and further in view of King.

Regarding claim 68, see the teachings of Ohta and Kaneshige as discussed in claim 66 above. Further, Kaneshige also disclose causing the drive to see from a first location on the optical media to a second location on the optical media *(Fig. 23; column 13, line 66 – column 14, line 4 – wherein data from the second position are read in at t_6)*.

However, Ohta and Kaneshige do not disclose sending a read command with a force unit access (FUA) bit set to one to the drive.

King also discloses sending a read command with a force unit access (FUA) bit set to one to the drive *([0013])*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of King into the system disclosed by Ohta and Kaneshige in order to provide reliability of data *(King: [0013])*.

Claims 70-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta and Kaneshige as applied to claims 1, 11-14, 17, 20, 22, 24, 53-55, 65-67, and 69 above, and further in view of Lamkin and Takagi.

Regarding claim 70, see the teachings of Ohta and Kaneshige as discussed in claim 1 above. Ohta also discloses the plurality of data streams comprises a plurality of data streams corresponding to audio files, a first audio file stream of the plurality of audio streams is a real-time data stream *(column 16, lines 25-33 – wherein one of the data streams that is reproduced for playback is interpreted as the recited real-time data stream since each frame of the audio streams should be played back in a timely manner)*, reading of the first CD audio file stream started at time t_x *(column 16, lines 26-33 - wherein the audio stream in the first audio file is interpreted as the first audio stream)*, reading of a second CD audio file stream of the plurality of CD audio file streams started at time t_y *(column 16, lines 26-33 – wherein the second audio stream is the audio stream recorded in the second file separate from the first file)*, where $t_x \neq t_y$, and the reading of the later of the first or second CD audio file streams does not interrupt the reading of the earlier of the first or second CD audio file streams *(column 16, lines 26-33)*.

However, Ohta and Kaneshige do not disclose the plurality of data streams comprises a plurality of data streams corresponding to CD audio tracks, and where $t_x \neq t_y$.

Takagi discloses a user can select different starting times for playing back each of the plurality of data streams according to their convenience *(column 15, line 47 –*

column 16, line 52; Fig. 10 - wherein user can choose to select playback of a plurality of data streams arbitrarily).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the feature that lets user arbitrarily select different starting times for playing each stream into the method taught by Ohta and Kaneshige in order to provide users with convenience in selecting which stream to be played back thus enhancing the user interface of the method.

However, Ohta, Kaneshige, and Takagi do not disclose the plurality of data streams comprises a plurality of data streams corresponding to CD audio tracks.

Lamkin discloses the plurality of data streams comprises a plurality of data streams corresponding to CD audio tracks *(pages 15-16, table A.1.5).*

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of Lamkin into the system taught by Ohta, Kaneshige, and Takagi in order to play back CD audio data thus enhancing the applicability of the system.

Regarding claim 71, Ohta and Lamkin also disclose the second audio track stream *(Lamkin: pages 15-16, table A.1.5)* is a real-time data stream *(Ohta: column 16, lines 25-33 – wherein the second data stream that is reproduced for playback is interpreted as a real-time data stream since each frame of the audio streams should be played back in a timely manner).*

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Q. Dang whose telephone number is (571)270-1116. The examiner can normally be reached on IFT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, THAI Q. TRAN can be reached on 571-272-7382. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hung Q Dang/
Examiner, Art Unit 2484

/Thai Tran/
Supervisory Patent Examiner, Art Unit 2484